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INTERNATIONAL PRELIMINARY REPORT ON PATENTABILITY


(Chapter II of the Patent Cooperation Treaty)

(PCT Article 36 and Rule 70)

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Applicant's or agent's file reference CN030005		FOR FURTHER ACTION		See Form PCT/PEA416		
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International Patent Classification (IPC) or national classification and IPC H04L12/58, H04Q7/22						
Applicant INTERNATIONAL BUSINESS MACHINES CORPORATION et a						
<p>1. This report is the international preliminary examination report, established by this International Preliminary Examining Authority under Article 35 and transmitted to the applicant according to Article 36.</p> <p>2. This REPORT consists of a total of 5 sheets, including this cover sheet.</p> <p>3. This report is also accompanied by ANNEXES, comprising:</p> <p>a. <input checked="" type="checkbox"/> sent to the applicant and to the International Bureau) a total of 87 sheets, as follows:</p> <p><input type="checkbox"/> sheets of the description, claims and/or drawings which have been amended and are the basis of this report and/or sheets containing rectifications authorized by this Authority (see Rule 70.16 and Section 607 of the Administrative Instructions).</p> <p><input type="checkbox"/> sheets which supersede earlier sheets, but which this Authority considers contain an amendment that goes beyond the disclosure in the international application as filed, as indicated in item 4 of Box No. I and the Supplemental Box.</p> <p>b. <input type="checkbox"/> (sent to the International Bureau only) a total of (indicate type and number of electronic carrier(s)) , containing a sequence listing and/or tables related thereto, in computer readable form only, as indicated in the Supplemental Box Relating to Sequence Listing (see Section 802 of the Administrative Instructions).</p>						
<p>4. This report contains indications relating to the following items:</p> <p><input checked="" type="checkbox"/> Box No. I Basis of the opinion</p> <p><input type="checkbox"/> Box No. II Priority</p> <p><input type="checkbox"/> Box No. III Non-establishment of opinion with regard to novelty, inventive step and industrial applicability</p> <p><input type="checkbox"/> Box No. IV Lack of unity of invention</p> <p><input checked="" type="checkbox"/> Box No. V Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement</p> <p><input type="checkbox"/> Box No. VI Certain documents cited</p> <p><input checked="" type="checkbox"/> Box No. VII Certain defects in the international application</p> <p><input type="checkbox"/> Box No. VIII Certain observations on the international application</p>						
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**INTERNATIONAL PRELIMINARY REPORT
ON PATENTABILITY**

International application No.
PCT/EP2004/050874

Box No. I Basis of the report

1. With regard to the **language**, this report is based on the international application in the language in which it was filed, unless otherwise indicated under this item.

☐ This report is based on translations from the original language into the following language , which is the language of a translation furnished for the purposes of:

- ☐ international search (under Rules 12.3 and 23.1(b))
- ☐ publication of the international application (under Rule 12.4)
- ☐ international preliminary examination (under Rules 55.2 and/or 55.3)

2. With regard to the **elements*** of the international application, this report is based on *(replacement sheets which have been furnished to the receiving Office in response to an invitation under Article 14 are referred to in this report as "originally filed" and are not annexed to this report)*:

Description, Pages

1, 3, 4, 7, 8, 10-18	as originally filed
2, 2a, 9	received on 07.03.2005 with letter of 01.03.2005
5, 6	filed with telefax on 03.08.2005

Claims, Numbers

1-14	filed with telefax on 03.08.2005
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Drawings, Sheets

1/9-9/9	as originally filed
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☐ a sequence listing and/or any related table(s) - see Supplemental Box Relating to Sequence Listing

3. ☐ The amendments have resulted in the cancellation of:

- ☐ the description, pages
- ☐ the claims, Nos.
- ☐ the drawings, sheets/figs
- ☐ the sequence listing (*specify*):
- ☐ any table(s) related to sequence listing (*specify*):

4. ☐ This report has been established as if (some of) the amendments annexed to this report and listed below had not been made, since they have been considered to go beyond the disclosure as filed, as indicated in the Supplemental Box (Rule 70.2(c)).

- ☐ the description, pages
- ☐ the claims, Nos.
- ☐ the drawings, sheets/figs
- ☐ the sequence listing (*specify*):
- ☐ any table(s) related to sequence listing (*specify*):

* If item 4 applies, some or all of these sheets may be marked "superseded."

**INTERNATIONAL PRELIMINARY REPORT
ON PATENTABILITY**

International application No.
PCT/EP2004/050874

Box No. V Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement

1. Statement

Novelty (N)	Yes: Claims	1-14
	No: Claims	
Inventive step (IS)	Yes: Claims	
	No: Claims	1-14
Industrial applicability (IA)	Yes: Claims	1-14
	No: Claims	

2. Citations and explanations (Rule 70.7):

see separate sheet

Box No. VII Certain defects in the international application

The following defects in the form or contents of the international application have been noted:

see separate sheet

1 With respect to item V:

2 Reference is made to the following documents:

- D1: NOVAK L ET AL: "MMS-BUILDING ON THE SUCCESS OF SMS" ON - ERICSSON REVIEW, ERICSSON. STOCKHOLM, SE, no. 3, 2001, pages 102-109, XP001081066 ISSN: 0014-0171
- D2: PIHKALA K ET AL: "Design of a dynamic smil player" PROCEEDINGS 2002 IEEE INTERNATIONAL CONFERENCE ON MULTIMEDIA AND EXPO, vol. 2, 26 August 2002 (2002-08-26), pages 189-192, XP010604729
- D3: HONKALA M ET AL: "Xforms in X-smiles" PROCEEDINGS OF THE SECOND INTERNATIONAL CONFERENCE ON WEB INFORMATION SYSTEMS ENGINEERING, vol. 1, 3 December 2001 (2001-12-03), pages 203-211, XP010589053

- 2.1 Document D1** discloses, according to features of **claim 1**, an interactive method for multimedia message services comprising the steps of: receiving a multimedia message from a server; generating a page displaying or playing the multimedia message at an user terminal (*D1: page 103: MMS content, Fig. 1; page 105: MMS architecture and elements, Fig. 4*)

The subject-matter of claim 1 differs from that known method in that one or more control elements are embedded into the displayed or played multimedia message and the relationship between said control elements is defined; and that responsive to the operations of the one or more control elements at least one action event is triggered to automatically generate a response message to request a service from the server and to send the response message to the server.

The problem to be solved can therefore be regarded as providing interactivity of the user interface.

However, document D1 contains a clear hint into this direction (*cp. the first bullet on page 104, left-hand column*). The XML-dialect SMIL can be used within MMS

messages to provide interactive presentations.

Document **D2** which is related to SMIL discloses the use of interrelated control elements triggering action events according to the differentiating features mentioned above (*cp. page 191, right-hand column, 2nd par., Fig. 4*). Even if the feature of sending a message to a server in response to the operation of a control element is not explicitly disclosed in **D2**, this technique is generally known in the art of languages like HTML, XML or SMIL which are used for presenting web content to terminals. An example is the well known hyperlink on a web page or within an e-mail.

It would therefore be obvious to the person skilled in the art, namely when the same result is to be achieved, to apply these features with corresponding effect to a method according to document **D1**, thereby arriving at a method according to claim 1.

2.2 Independent **claims 8, 13 and 14** relate to respective apparati entirely corresponding to the method defined by claim 1.

2.3 The subject-matter of **claims 2 to 7 and 9 to 12** relates to the use of various XML- and/or SMIL-based features which are directly derivable from document **D2** (*cp. chapter 3; Note: Xforms is mentioned in D2 for extending SMIL documents; Xforms is described in document D3*).

3 The subject-matter of **claims 1 to 14** is therefore not based on an inventive step (Article 33(3) PCT).

4 Re Item VII.

Independent **claims 1, 8, 13 and 14** are not in the two-part form recommended by Rule 6.3(b) PCT having a pre-characterizing portion which correctly reflects the prior art of documents **D1**.

messages to pass on video clips, pictures, audio samples and text. Multimedia message service (MMS) has been proposed in consequence of the technical upgrades in the short message service.

MMS is the natural evolution of SMS. The messaging standard for MMS is set up by two organizations, WAP (Wireless Application Protocol) Forum and 3GPP (3rd Generation Partnership Project). Therefore MMS is designed to operate at upper levels of the WAP protocol, without limitation to a certain art of transmission, supporting both the circuit-switched data communication and the general packed radio service (GPRS) data communication. MMS currently adopts WAP-push technique, which is a store & transmit function similar to that of SMS, and therefore the current MMS technique remains yet a store/transmit one. This means that if a message is sent by a handset, a recipient will not receive it directly. Instead of that, the message is received in advance by a multimedia message center of the network in which the subscriber resides, and then the multimedia message center sends a notification to the recipient informing that the recipient should download the message from the multimedia message center. A similar multimedia message center exists also in SMS systems, but as all the messages to be sent are text ones, it is relatively simple in operation. Whereas by MMS, the operation in the message center is relatively complex as it will not rely on a certain network of a certain operator, so if, for example, the recipient resides on a slower network, or his/her handset's screen has a different size, the equipment at the operator needs to be able to detect the situations and to configure a corresponding message format. Further details of MMS can be found in Novak L et al: "MMS-Building on the Success of SMS" on - Ericsson Review, Ericsson, Stockholm, SE, no 3, 2001, pages 102-109, XP001081066 ISSN: 0014-0171.

MMS is a new global message communication standard, the most prominent feature of which is the supporting of multimedia applications. The multimedia message enables contents and pieces of information with a full range of functions, including images, audio information, video information, data and text, to be transferred, and video clips, pictures, voice and text, supported by a GPRS network, to be transferred, by taking advantage of WAP protocol as a carrier. When the MMS specification was constituted by the standard organization it was once conceived that MMS should be an applications bearing platform serving not only as a store-forward center for messages but performing various enriched applications. Through a mobile terminal supported by MMS a user should enjoy the same content services and experiences, as he or she would get

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through the classical Internet. As MMS can support a wide range of data format standards, such as image format, audio format, animation format standard, that entirely the same experience as get from the internet is therefor desired to be available for user by MMS , or even multimedia data stream

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bring huge latency and reduce the performance of the whole system. What is needed is to display a richer dynamic form in an optimum way on a MMS client's terminal.

Disclosure of the Invention

In view of the above problems in the prior art the aim of the present invention therefore is to provide an interactive method for multimedia message services.

An object of the present invention is to realize an interactive multimedia communication between subscribers and a MMS back end system, for example a multimedia message providing server, preferably in response to an piece of multimedia message from a server a response message is generated automatically to be sent back to the server without a multiple round-trips between the user terminal and the server, and according to the present invention a flexible, richer and more convenient local interaction at user terminal is possible.

Another object of the present invention is to provide an optimized user interface of the MMS message for users. To this end one or more interactive control elements are embedded into the multimedia message, the user performs the local interaction of the user terminal as well as the interaction between the user terminal and the server (for example a multimedia message sending server).

Yet another object of the present invention is to create a dynamic Web form, which is displayed on the user terminal, in XForms language, preferably a plurality of dynamic forms included in a single message presenting page to provide richer interactive presentations and more optimized multimedia messages for the user, to enhance his or her experience.

According to the present invention an interactive method for multimedia message services is provided comprising the steps of: receiving a multimedia message from a server; generating a page displaying or playing the multimedia message at a user terminal, wherein one or more control elements are embedded into the displayed or played multimedia message and the relationship between said control elements is defined; responsive to the operation of one or more of said control elements, triggering an action event to automatically generate a response message to request a service from the server; and sending the response message to the server.

In one embodiment, said triggered action event is to modify the content of said multimedia message; and in response to the operation of said controllers, displaying or playing said modified content of said multimedia message.

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In another embodiment, the step of generating the page for displaying or playing a multimedia message further includes: parsing the received multimedia message to obtain the presentation structure of said multimedia message; and generating a data model used in the page for displaying or playing said multimedia messages based on said multimedia message presentation structure.

According to another aspect of the present invention there is provided a user terminal for a multimedia message service comprising: a device for receiving a multimedia message from a server; a device for generating a page for displaying or playing said multimedia message; a device for embedding one or more control elements, between which relationships are defined, into said displayed or played multimedia message; and a device for triggering at least one action event in response to an operation of said one or more control elements, the action event automatically generating a response message to request a service from the server.

According to yet another aspect of the present invention there is provided a multimedia message service communication system comprising: one or more of the aforementioned user terminals; and one or more servers for sending a multimedia message to said user terminals.

The interactive approach for the multimedia message service according to the present invention, the user terminal and corresponding communication system as well as the corresponding computer program provide a method for generating the value-added message based message for multimedia message providers, a friendly user interface, which enables a more vivid dynamic form to be presented in an optimum manner, for the MMS user, and a more convenient way to send a service request for the MMS user. According to the present invention the user can access more

server 300 via the MMSC 200. The parser module 112 parses the multimedia message received from the server, reads out the information in respect to the message format to be presented on the MMS terminal 100 and the related information, so as to carry out corresponding process on the message of various presentation format. Should, for example the received message format be pictorial a picture information is displayed according to the picture message format; an audio one, an audio message is played; and a textual one, the content of a text is displayed. The interactive module 113 carries out the associated operations corresponding with individual controllers listed in the multimedia message form, according to the relationship between the media objects, which have been parsed from the received multimedia message, to realize the local interaction on the MMS terminal 100 and the interaction between MMS terminal 100 and the server 300. The storage module 114 is used to store the received message and involved process results therewith.

Now reference is taken to Figure 4. Figure 4 schematically shows the interactive procedure for the multimedia message service according to an embodiment of the present invention. Firstly, in procedure 130 the server 300 sends an interactive multimedia message to the MMS terminal 100 via a communication network and a MMSC 200. The message is, for example, sent once and may be permanently stored into the MMS terminal 100.

In procedure 120, a process of a local interaction on the MMS terminal 100 is shown. The local interaction process is a process that deals mainly with user operations, namely that the user performs operations, including adding, deleting, modifying, entering, selecting, searching and etc., on various forms provided on the user interface. Of course the user can either choose one or more from said operations, or perform none of them.

Depending on the requirement, an interaction between a MMS terminal and a server is also realizable. In procedure 131, a request message comprising request message inputted or chosen by the user, is sent from MMS terminals 100 to service server. Preferably, a response message with the desired service is sent back (procedure 132) to the MMS terminal (100).

Hereafter, the interactive approach for multimedia message service is further explained in details with reference to Figure 5.

Figure 5 schematically shows the flow chart of the procedures of the interactive approach for the multimedia message service of an embodiment of the present invention. The procedure steps illustrated in the

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CLAIMS

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8. A user terminal for a multimedia message service comprising: a device for receiving a multimedia message from a server; a device for generating a page for displaying or playing said multimedia message; a device for embedding one or more control elements, between which relationships are defined, into said displayed or played multimedia message; and a device for triggering at least one action event in response to an operation of said one or more control elements, the action event automatically generating a response message to request a service from the server.
9. The user terminal according to claim 8, characterized in that the device for generating the page for displaying or playing a multimedia message further includes: a device for parsing the received multimedia message to obtain the presentation structure of said multimedia message; and a device for generating a data model used in the page for displaying or playing said multimedia messages based on said multimedia message presentation structure.
10. The user terminal according to claim 8, characterized in that when said triggered action event is to modify the content of said multimedia message, in response to the operation of said controller, said means for triggering action event and for performing corresponding action displays or plays said modified content of said multimedia message.
11. The user terminal according to claim 8, characterized in that said relationship includes at least one of a LINK relationship and a CONTAIN relationship.
12. The user terminal according to claim 8, characterized in that it further includes a device for parsing the received multimedia message to obtain an action list of related action rules; a device for listening in the triggered action events based on said action list.
13. A multimedia message service communication system comprising: one or more user terminals as claimed in any of claims 8 to 12; and one or more servers for sending a multimedia message to said user terminals.
14. A computer program for running on a user terminal within a multimedia communication system, wherein said communication system comprises one or more user terminals, and one or more servers for sending a multimedia message to said user terminals, said computer program comprising instructions for carrying out all the steps of the method of

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any one of claims 1 to 7 when the computer program is executed on the user terminal.

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